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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/016,510	12/10/2001	Daniel N. Harres	38190/240368	9094

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EXAMINER

MEEK, JACOB M

ART UNIT	PAPER NUMBER
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2637

DATE MAILED: 04/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/016,510

Applicant(s)

HARRES, DANIEL N.

Examiner

Jacob Meek

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4 - 14, 17 - 22 is/are rejected.
- 7) ☒ Claim(s) 3, 15, 16, 23, and 24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/01.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because of apparent typographical error in sentence beginning at line 11. In view of previous description of invention, 1st mention of receiver on line 12 appears to be appropriately the transmitter. Correction is required. See MPEP § 608.01(b).

Claim Objections

2. Claims 18 and 19 objected to because of the following informalities: Claims depend from claim 14, which is drawn to a digital communication receiver. Preamble of claims 18 and 19 are drawn to a digital communication system. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 4 – 6, 9, 10, 13, 14, and 19 - 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamburelli (US Patent 4,283,788).

With regard to claim 20, Tamburelli teaches a digital communication system comprising a transmitter capable of integrating at least one digital signal (see Figure 1, FR and column 4, line 63 – column 5, line 2 where this is interpreted as a low-pass filter of which an integrator is a form) by converting digital signal into an integrated signal (where Figure 1,

FR is interpreted as providing this function) wherein transmitter is capable of transmitting the integrated signal (see figure 1, 100 where this is interpreted as transmitter); and a receiver capable of receiving the integrated signal and differentiating the integrated signal into a representation of the encoded signal that is proportional to the rate of change of at least one integrated signal (see figure 2, and column 4, lines 12 – 16). Tamburelli is silent with respect to specific time constants of his circuit, but in view of Tamburelli's disclosure the selection of specific values would be a design choice base on system characteristics. It would have been obvious to one of ordinary skill of the art at the time of invention to adapt Tamburelli's system based on system design requirements.

With regard to claim 21, Tamburelli teaches a digital communications system with a transmitter and receiver. Tamburelli is silent with respect encoding and decoding based on a predefined communications standard. Tamburelli states his invention is useful for digital transmission systems (see column 1, lines 13 – 17), where digital transmission systems are known to be standards based (ANSI, CCITT, etc). Therefore it would have been obvious to one of ordinary skill in the art at the invention to apply Tamburelli's invention to a specific communications standard.

With regard to claim 22, Tamburelli teaches a digital communications system with a receiver capable of restoring the encoded digital signal from the representation of at least one encoded digital signal (see column 6, lines 28 – 45).

With regard to claims 1, 2 and 6, the steps claimed as method are nothing more than a restatement of the function of the system of claim 20, 22 and 21, respectively, and therefore would have been obvious to one of ordinary skill in the art.

With regard to claim 4, Tamburelli teaches a method of integrating encoded digital signal compromises low pass filtering the encoded digital signal (see column 4, line 63 – column 5, line 2 where this is interpreted as equivalent).

With regard to claim 5, Tamburelli teaches a method of differentiating the integrated signal compromises high pass filtering the integrated signal (see column 4, lines 12 – 16 where this is interpreted as equivalent).

With regard to claim 9, Tamburelli teaches a method of decoding the representation of decoded signal (see column 2, lines 12 – 19). Tamburelli is silent with respect encoding and decoding based on a predefined communications standard. Tamburelli states his invention is useful for digital transmission systems (see column 1, lines 13 – 17), where digital transmission systems are known to be standards based (ANSI, CCITT, etc). Therefore it would have been obvious to one of ordinary skill in the art at the invention to apply Tamburelli's invention to a predefined communications standard.

With regard to claim 10, the transmitter claimed is a restatement of the limitations of the transmitter claimed in claim 20 and therefore would have been obvious to one of ordinary skill in the art at the time of invention.

With regard to claim 13, Tamburelli teaches an integrator (see Figure 1, FR). Tamburelli is silent on the details on its implementation. It would have been obvious to one of ordinary skill of the art at the time of invention that a low pass filter would be required to have at least one resistor and one capacitor if being implemented using discrete components.

With regard to claim 14, the receiver claimed is a restatement of the limitations of the receiver claimed in claim 20 and therefore would have been obvious to one of ordinary skill in the art at the time of invention.

With regard to claim 19, Tamburelli teaches a receiver with a differentiator comprising a high pass filter having at least one resistor and capacitor (see figure 2, CS).

4. Claims 7, 8 11, 12, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamburelli ('788) in view of Muñoz-Rodriguez. et al (Code interleaving for high speed digital transmission; Munoz-Rodriguez, D. et al; Communications, Speech and Vision, IEE Proceedings Volume 136, Issue 1, Feb. 1989 Page(s):71 - 74).

With regard to claim 7, Tamburelli teaches a method for the transmission of data. Tamburelli is silent with respect to specific encoding techniques. Muñoz-Rodriguez teaches that DC-free signals are advantageous for use in AC coupled systems (see Introduction, 1st paragraph). It would have been obvious to one of ordinary skill of the art at the time of invention to utilize encoding with zero DC components to improve transmission system performance.

With regard to claim 8, Tamburelli teaches a method for the transmission of data. Tamburelli is silent with respect to specific encoding techniques. Muñoz-Rodriguez teaches use of 5B6B coding (see Introduction, 1st paragraph). It would have been obvious to one of ordinary skill of the art at the time of invention to utilize a form of line encoding in a digital transmission system to improve performance. Examiner further notes that 4B5B, 8B10B, and Manchester Encoding are defined in IEEE standards as data encoding schemes.

With regard to claim 11, Tamburelli teaches the transmission of data. Tamburelli is silent with respect to specific encoding techniques. Muñoz-Rodriguez teaches that DC-free signals are advantageous for use in AC coupled systems (see Introduction, 1st paragraph). It would have been obvious to one of ordinary skill of the art at the time of invention to utilize encoding with zero DC components to improve transmission system performance.

With regard to claim 12, Tamburelli teaches the transmission of data. Tamburelli is silent with respect to specific encoding techniques. Muñoz-Rodriguez teaches use of 5B6B coding (see Introduction, 1st paragraph). It would have been obvious to one of ordinary skill of the art at the time of invention to utilize a form of line encoding in a digital transmission system to improve performance. Examiner further notes that 4B5B, 8B10B, and Manchester Encoding are defined in IEEE standards as data encoding schemes.

With regard to claim 17, Tamburelli teaches the reception of data. Tamburelli is silent with respect to specific encoding techniques. Muñoz-Rodriguez teaches that DC-free signals are advantageous for use in AC coupled systems (see Introduction, 1st paragraph). It would have been obvious to one of ordinary skill of the art at the time of invention to utilize encoding with zero DC components to improve transmission system performance.

With regard to claim 18, Tamburelli teaches the reception of data. Tamburelli is silent with respect to specific encoding techniques. Muñoz-Rodriguez teaches use of 5B6B coding (see Introduction, 1st paragraph). It would have been obvious to one of ordinary skill of the art at the time of invention to utilize a form of line encoding in a digital transmission system to improve performance. Examiner further notes that 4B5B, 8B10B, and Manchester Encoding are defined in IEEE standards as data encoding schemes.

Allowable Subject Matter

5. Claims 3, 15, 16, 23, and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Other Cited Prior Art

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Takahashi (US- 5,175,748) discloses a waveform shaping

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circuit for use in a receiver. Walker (US-5,185,765) discloses integration and differentiation of encoded transmitted and received signals. Drakul et al (US-5,583,892) discloses the shaping of a pulse based on coding information. Segaram (US-5,357,145) and Tsuzara (US-6,388,462) disclose alternative techniques for the shaping of pulses to reduce EMI. Liu (US-6,404,276) discloses a method for filtering Ethernet transmit signals. Silva et al (EMI from an automotive CAN bus; Silva, F. et al; Electromagnetic Compatibility, 1999 IEEE International Symposium on Volume 1, 2-6 Aug. 1999 Page(s):512 - 516 vol.1) teach EMI reduction in a vehicular application.


Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob Meek whose telephone number is (571)272-3013. The examiner can normally be reached on 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571)272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMM 



**JAY K. PATEL
SUPERVISORY PATENT EXAMINER**